

# Study on Usage of Management Information System in Medium to Large Scale Industries

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**Abstract**—In management of almost all operational activity, the information forms a major input and as such for effective implementation of futuristic information system in overall system, it is essential to modify the existing management. This paper discusses the acceptance and usage of Management Information System (MIS) in Medium to Large Scale Industries. Around 75 industries were selected for the purpose of study. The main emphasis was laid to understand MIS usage and reason which hinder its use. To find out the possible reasons for inadequate MIS usage in industries, the respondents were requested to provide a feedback on various parameters which could be possible reason for non-use of MIS in their respective organizations. After collecting the feedback, the average and standard deviation is calculated for each reason and tabulated. Based on the feedback received from the respondents how many industries are using MIS in their organization and if not what might be the reason for not using MIS are found at the end of the study.

**Index Terms**— Decision Making, Usage, Industries, Management, Information Systems

## I. INTRODUCTION

In this information age, data has become one of the most important resources to organizations. The effective and efficient management of large quantities of data is a common problem found in many industries. A Management Information System is an integrated man-machine system that provides information to support the planning and control functions of managers in an organization [1]. An effective Management Information System supplies accurate, relevant and timely information to the manager of an organization. Management Information System helps the management at various levels and it is a means of communication, where data are collected, processed, stored and retrieved later for making decisions regarding planning operation and control of an organization. In today's world of ever increasing complexities of business as well as management for every organization to survive and grow, must have an efficient and effective Management Information System which will improve the productivity of the industry [6]. Yuemin Zhou, Bingfang Wu, Jihua Meng [7] developed A soil and water conservation-oriented small watershed management information system based on geographic information system and remote sensing technology. Adriana Harizanova [8] attempted for analysis of the theory in the sphere of the Management Information System (MIS). The information

needs of the various managerial levels are pointed out and the stages in the development of MIS are defined. The growing importance of the application of MIS in tailoring industry is shown. S. Chakrabarti & S. Mitra & B. Bhattacharyya [9] discusses the typical problems of parameter selection and optimization in machining processes to bring out the design ideas that form the foundation of n-tier management information systems (MIS).

Bo Yan, Yiyun Chen, Guangwen Huang [11] introduces the main content and operation flow of the tax management information system as well as main functions of its subsystems. Then we describe the general structure and technical implementation strategy of the application system. The tax management information system can improve the taxation service, reduce the taxation cost. Weijian Huang; Hua Zhao; Liang Huang; Wei Du [12] showed that the management information system is widely used in the logistics area and it improves the efficiency of logistical activities. It will be more and more advance and widely using in the logistics.

## A. Information and Management in the Organization

Management [10] is the act of directing a process to accomplish a specific task. It is the process of getting things done through and with people. A manager in an organization gets the thing done by performing five basic functions such as planning, organizing, staffing, directing and controlling. Information is a data that is processed in a form which helps the management to take decisions i.e. it is the data that have been put into a meaningful and useful context and communicated to a recipient who uses it to make decisions. The relationship between the data and the information is as shown in figure-1.

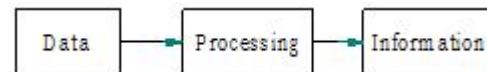


Fig. 1. Relationship of Data and Information

1. Strategic Information: Is used by senior managers or top management to plan the objectives of their organization, and to assess whether the objectives are being met in practice. Such information includes overall profitability, the profitability of different segments of the business, future market prospects, the availability and cost of raising new funds, total cash needs, total management levels and capital equipment needs, etc. although internally generated information will always be

used. Information requirements of top management are met by strategic information tier by arranging information from internal and external sources.

2. Tactical Information: Is used by middle management to ensure that the resources of the business are employed to achieve the strategic objectives of the organization. Such information includes productivity measurement output per on an - hour or per machine – hour, budgetary control or variance analysis reports and cash flow forecasts, managing levels and profit results within a particular department of the organization, labor turnover statistics within a department, short term purchasing requirements etc. Tactical information is usually prepared regularly and it is used for the decision making referred to as management control.

3. Operational Information: Is used by operation level of management (front – line manager) such as foremen or head clerks to ensure that specific tasks are planned and carried out properly within a factory or office etc. In the payroll system, for example, operational information relating to day rate labor will include the hours worked each week by each employee, his rate of pay per hour, details of his deductions, and for the purpose of wages analysis, details of the time each man spent on individual jobs during the week. In this example, the information is required weekly. Operational information relates to the level of decision – making referred to as operational control.

### B. Management Information System

The MIS is an integrated user-machine system for providing information to support operations, management and decision making functions in an organization [2]. The system utilizes computer hardware and software, manual procedures, models of analysis, planning, control and decision making and a data base.

The diagrammatic representation of the concept of MIS [5] has been show in figure-2.

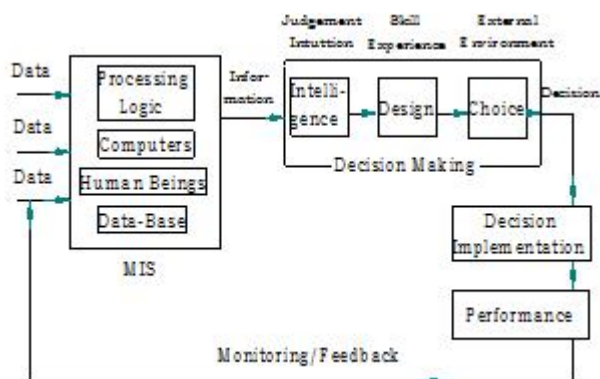


Fig. 2. The concept of Management Information System

Management Information System helps the management at various levels and it is a means of communication, where data are collected, processed, stored and retrieved later for making decisions regarding planning operation and control of an organization. Decision making is an important requirement in every organization, where in different types of information obtained from different functional area of

management like finance, marketing, production, personal, planning and control etc. In order to get a better grip on the activity of information processing, it is necessary to have a formal system which should take care of the following point

- Handling of a voluminous data.
- Confirmation of the validity of data and transaction.
- Complex processing of data and multi-dimensional analysis.
- Quick search and retrieval.
- Mass storage.
- Communication of the information system to the user on time.
- Fulfilling the changing needs of the information.

## II. RESEARCH ABOUT USAGE OF MIS IN MEDIUM TO LARGE SCALE ORGANIZATION

In any organization a variety of information generated for different purposes, the right information should reach right person in right time this is very important to the every person in the organization to perform their work effectively [4]. The purpose of this research work is to study how effectively the information flow is taking place in industries with the help of MIS if not what are all the reason which is responsible of improper flow of information in the industries.

### A. Research Methodology

So the objective of the study is to study the usage and acceptance of Management Information System in medium to large scale industries. Around 75 units of medium to large scale industries were selected for the purpose of this study. These industries i.e. medium scale to large scale are selected based on various parameters such as number of employees working, total turnover, production rate, number of shifts the company runs etc. The industries which are selected for the study include production industry, process industry and service industry. The study is exclusively based on the primary data collected through a sample survey. Main emphasis was laid to understand Management Information System usage and reasons which hinder its use. The population of the study comprised of Chief Executive, Industrialists, General Managers, line supervisors and engineers of various units.

To achieve the objective of the study, the data was collected through a structured and pre-tested questionnaire. The questionnaire was prepared on the basis of review of literature and many discussions with professionals, consultants and experienced academicians. Five respondents were selected in all the industries which are selected for the study. All the selected respondents were personally contacted to get the questionnaire filled. The responses were collected on five point liker type scale ranging from strongly agree to strongly disagree (1.Strongly Agree, 2.Agree, 3.Neutral, 4.Disagree and 5.Strongly Disagree).

### B. Results of the Survey

After the collection of data from all the respondents, the scoring was done by assigning a numerical value of 5 to the most favorable strongly agree position on the scale, 4 to the

next most favorable Agree, 3 to the Neutral, 2 to the Disagree and 1 to the Strongly Disagree. Thus all the responses obtained were converted in quantitative data, which are further tabulated as shown in Table-I

TABLE I. MIS USAGE IN MEDIUM TO LARGE INDUSTRIES

MIS Usage	Medium to Large Scale Industries		
	Yes	No	Total
	(%)	(%)	(%)
	58	17	75
	(77)	(23)	(100)

The percentage use of Management Information System in 75 medium to large scale industries is shown in figure-3.

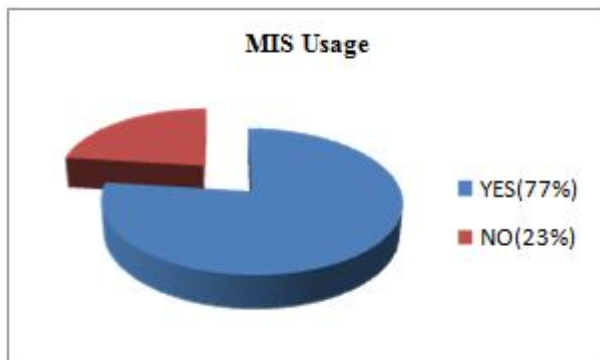


Fig. 3 . MIS Usage in Medium to Large Scale Industries

An analysis of Table-I reveals that only 58 industries out of 75 industries (77%) in medium to large scale sector is making use of Management Information System for supporting decision making process

### C. Analysis and Conclusions

To find out the possible reasons for inadequate use or not use of Monument Information System in those industries, the respondents were requested to provide a feedback on various factors which could be possible causes for non-use of MIS in their respective units. The questionnaire was prepared on the basis of review of literature and many discussions with professionals, consultants and experienced academicians. Some of the common reasons for non-use of MIS are

- The effective usage of MIS computerization is required.
- The employees should know potential usage of computers.
- The management should invest money to procure computers and related systems which are required.
- Proper training should be given to employees to cope up with the system.
- Proper awareness has to be created among the employees such as benefits of MIS etc.

As per the Table-I, 17 out of 75 industries are not making use of MIS. So we have collected feedback from 5 respondents from each of these industries. After collecting the feedback, the average and standard deviation is calculated for each reason for non-use of MIS.

The responses thus obtained are analyzed and the results are tabulated in Table-II. The percentage use of computers (Computerization) in the medium to large scale industries

TABLE II. REASONS FOR NON-USE OF MIS IN MEDIUM TO LARGE SCALE INDUSTRIES

Reason	Medium to Large Scale		
	Yes	No	Total
1. There is no computerization in our organization.	-	17	17
	Average		S.D
2. I do not know much about potential usages of Computers.	1.41		0.51
3. Financial Constraints is a reason for non-use of Computer/MIS.	3.12		0.86
4. Trained Computer Personnel are not available.	2.96		0.83
5. MIS is too expensive to use.	3.16		0.83
6. Benefits from MIS are low.	2.94		0.78
7. I have not heard of MIS.	2.05		0.83
8. Decisions I make are mostly too simple to need a computer.	3.24		0.75
9. I usually do not have time pressure when making decisions.	3.76		0.83
10. I usually do not face "what if" questions when making a decision.	2.35		0.70

which are not making use of Management Information System (17 industries) is shown in figure-4.

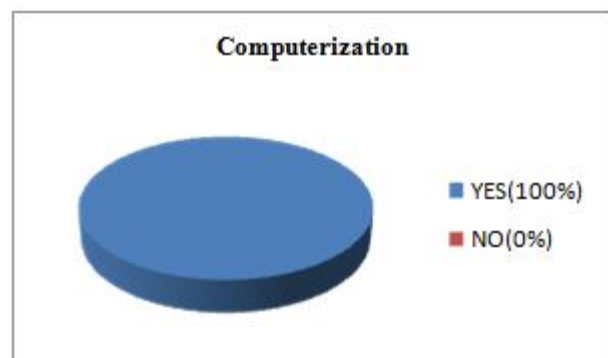


Fig. 4. Computerization in Medium to Large Scale industries

An analysis of Table-II indicates that the various reasons lead to non-use of MIS in medium to large scale industries. The main reason is limited use of computers has been attributed to unawareness of potential activities which a computer can handle and incomplete or no information about Management Information System and its benefits. As tabulated in table-II based on the data received by the respondent's reason for the non-use of MIS, the calculated values of standard deviation for each reason lies very close to the calculated values of average. So the deviation is not much to the average calculated value i.e. the reason from the respondents is appropriate for the non-use of Management Information System in their industries.

### D. Advises for Management

To implementing the MIS to any industry it is necessary to study the existing system in the industry in detail, the roles played by the manager for better decisions making, to stream line the vast information system to improve the productivity of an industrial plant. Management Information System is management oriented, the designing of Management Information System takes care of the managers who meet the information requirements. Any suitable

database management system is used to design the Management Information System as per the requirement of the management. The development of the system starts after deciding the management needs and keeping in view the overall objectives of the management. Once the Management Information System is developed based on the requirement, it is implemented along with the existing system for some period of time. After completely familiar with this system, the old system is stopped and new system is continued by the organization. It depends on the users how best they will use the system, learn the system, adopt the system and switchover from the existing system to the new system. Based on the survey conducted not all the industries are making use of MIS in their organization still many organizations have to know the importance, benefits and application of MIS. Those industries already using it should use it effectively then only it is possible to achieve the purpose for which it is used.

In any organization, small or big a major portion of the time goes in data collection, processing, documenting and communicating it to the people [3]. Hence a major portion of overheads goes into this kind of unproductive work in the organization. Every individual in an organization is continuously looking for some information which is needed to perform his/her task. Hence, the information is people oriented and it varies with the nature of the people in the organization. In management of almost all operational activity, the information forms a major input and as such for effective implementation of futuristic information system in overall system, it is essential to modify the existing management.

#### CONCLUSIONS

The study reveals that Management Information System is not being used completely in medium to large scale industries irrespective of process or production or service industries. Strategic level managers of these industries are still to appreciate the potential of this powerful application of information system. In order to increase the usage of MIS especially those industries which are not making use of MIS, there is a need to build up computer culture in the industry and creating awareness about MIS its usage, applications and benefits. Such information's are made available by various programs such as seminars, conferences, training

etc. This in turn, increases the usage of MIS in these industries. In management of almost all operational activity, the information forms a major input and as such for effective implementation of futuristic information system in overall system, it is essential to modify the existing management. An effective Management Information System supplies accurate, relevant and timely information to the manager of an organization.

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